C. G. F. 7]

D. Dis-474/54 (1)

COORG GOVERNMENT SECRETARIAT

File No. AGR 16/54

Serial No. (1)

195 .

( )

B Collection

Month and Year of Record 195

Passy.

SUBJECT

Prefabricated Aluminium Grain Storage bin for Paddy — Installation at Koodige farm —

Previous References	Later References

WD 3775—GBPM—5,000—23-8-52.

AGR. 15/54 (Misc)

Prc Prefabricated Aluminium Grain Storage Bin.

1 Submitted as personally directed by the Secy.

2 The Agents of "Indian Aluminium Coy Ltd" had discussed the utility of prefabricated Aluminium Grain Storage Bin with the Offg. Ch. Secy. and M(dto). M(dto) desired that local material for preparing bins for paddy (of bamboo) is available in plenty in Coorg. It was, however, desired to erect one prefabricated Aluminium Bin at the Govt. Agrl. Farm at Koodige as for experimental purposes. There is ofcourse necessity for a ~~Bin~~ bin in the Agrl. Farm at Koodige. If the prefab bin is to prove satisfactory in respect of ~~cost~~ cost, quality, capacity and weather-effects, the question of erecting more in the Cooperative Societies may be considered later on.

"B" Class
~~Agrl~~ 4(84
for Secy.
Mp
6/4/54

3 The biggest bin will cost about Rs. 3,000/- in Coorg (all charges included) and it

it will hold about 750 mds of paddy.

It was stated that the bin is being 4
~~is~~ used in heavy monsoon regions like Assam and as such it may stand the rains in Coorg. The bin can easily be assembled and dismantled and does not harbour insects or fungus and can be shifted from place to place - being light.

The expenditure in this connection can be 5
met from the provision of Rs 57,800/- made under "40- Agriculture - C/- Maintenance of Hoodige and Ponnampet farms" in the State Budget for 1954-55.

It is also felt that a model 6
Aluminium House ~~for Maydans~~ may be tried at Citrus ~~Cost~~ Citrus Die-back disease Station at Gonicoppal The cost of erection depends upon size and is between Rs. 2,322/- to Rs. 7,695/- F.O.R. Main Indian Port Towns. It may be a little more in Coorg. If the House is to be constructed, the expenditure may perhaps be met out of the provision ~~made under~~ noted in para 5 above

5 above or from "40- Agriculture - 76- Citrus Die-back disease scheme" and to be met entirely by the State.

1 Orders are solicited.

(From para 1)

4/5/54

G.S. 8 4/5/54

Adm E E to Compare the Cost of Construction with these

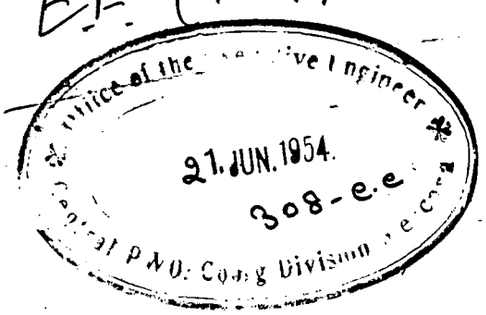
Print

6/5

9 E.E. may please see up & advise

5/5

10 E.E. (Mr. Bhagwan)



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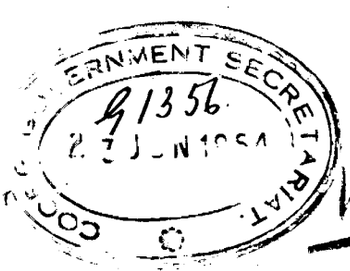
6/5/54



11

Grain Storage Structures:

It is true that local materials for construction of the above structures are available in plenty- namely, Bamboos and timber. The cost of these bamboo or timber structures is comparatively far lower than that of an prefabricated alluminium bin of equal capacity. For example, the Bukhari type of structure, which consists of a cylindrical frame work of bamboos resting on a timber flooring will cost Rs. 1300/-, the capacity being about 750 maunds.

Literature at flag (Y).

----Contd.

The Kothar type of Storage bin structure which essentially consists of a timber box-like frame work may cost of about Rs.2,000/-. The higher cost is due to its being a structure purely of timber. 12 (4)

The Morai type is comparatively cheap and costs about Rs. 1300/-- This consists of a frame work of bamboo splits wound round with rope made of stapled grass or padi stalks, resting on a flooring of timber planks. 13

The maintenance of the above mentioned structures is far easier and cheaper, and any losses by way of damage to the structures can very easily be replaced with the local materials available. 14

On the other hand, a prefabricated alluminium structure is very expensive costing about Rs.3000/- as reported. In addition to this, a foundation and basement of pucca masonry has to be built, which has to be condemned if the alluminium superstructure has to be shifted elsewhere. Moreover, any damage by way of disfigurement to the superstructure may result in considerable difficulty in its being assembled. 15

One advantage, with the prefab-alluminium structure, worth mentioning, is that it will give a very neat appearance. 16

Alluminium Frameless Houses: 17

It may be seen that these alluminium houses are extremely advantageous where temporary structures have to be put up for short durations, because of the following advantages:-

1) Extremely light-weight.

2) Easily dismantled and stored,

3) Easily transportable.

Regarding cost, it should be noted that the rates given are for the superstnuctures only. 18

....Contd.

Ref Letter no. C/5024 dated the 21.9.1954 from A.O.

p. 15

Sub:- Aluminium grain storage bin - Installation.

25 Please see the orders at para 23 of these notes. The A.O. has now submitted details and has requested that a sum of Rs. 2000/- may be sanctioned out of the provision made under "40- Agriculture - C- Agrl. experiments and Research - Govt Kodagu and experimental farms - C1- Maintenance of Peramapet Farms" in the current year's Budget.

26 Orders are solicited.

(From para 25)

24/9/54

Y.S. 27 24/9/54. May be sanctioned

28 Yes 29-9-54

P.D./2523)

OFFICE OF THE CHIEF MINISTER OF COORG. No. 6362 Date 30/9/54

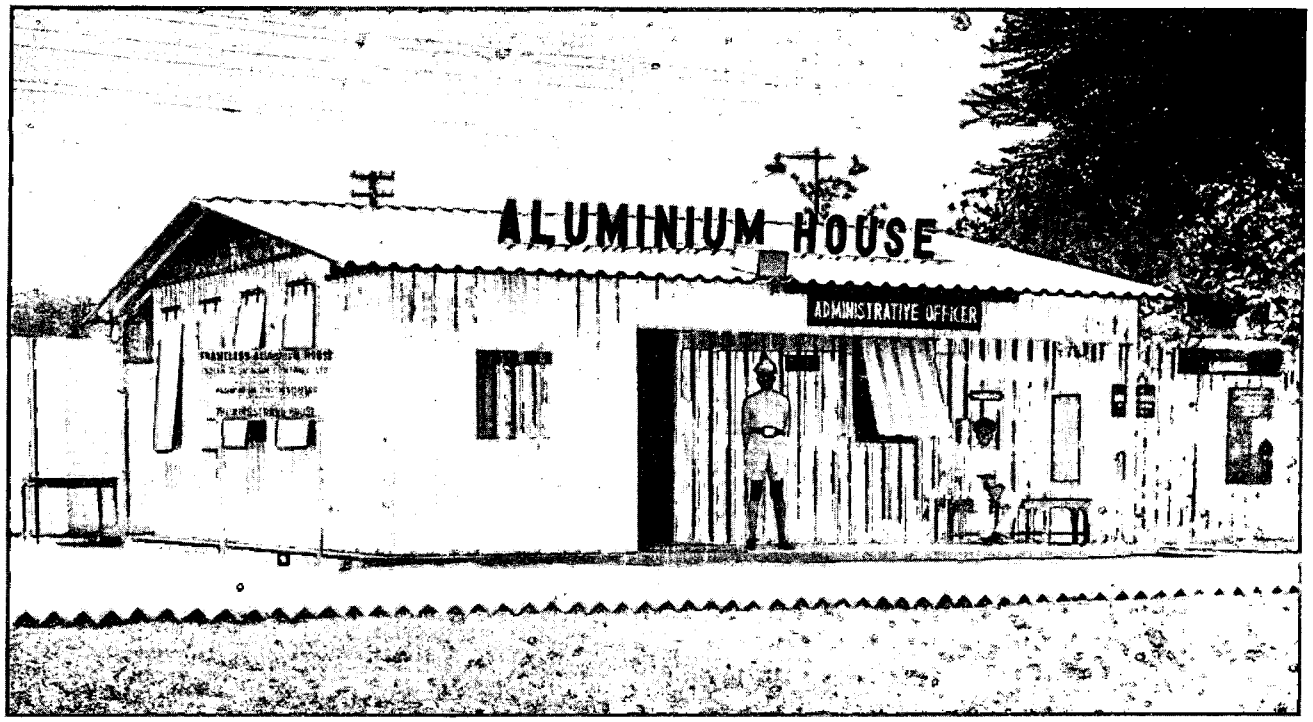
29 Draft sanction order put up.

1/X/54

Y.S. 1/10/54

Issued. B. 4645. dt. 16-10-54.

ALUMINIUM FRAMELESS HOUSE



Write to:

INDIAN ALUMINIUM COMPANY LIMITED

HEAD OFFICE: 31 Chowringhee Road, Calcutta—16

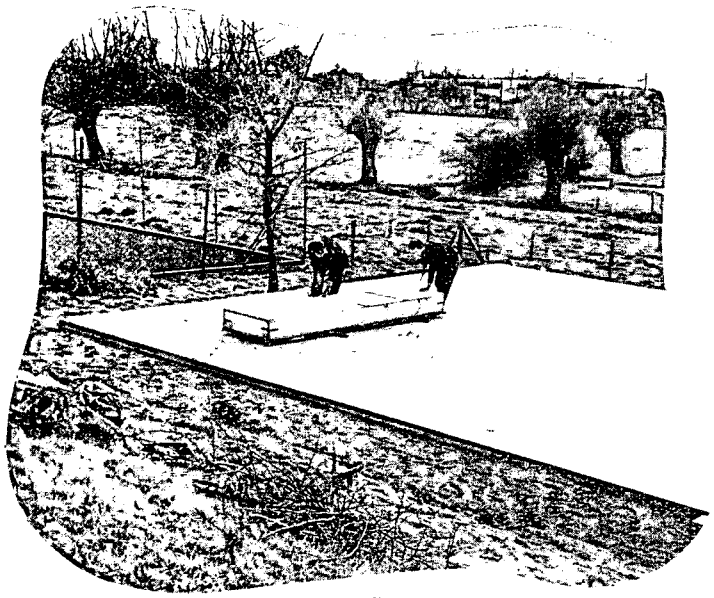
Branch Sales Offices:

DELHI: 44 Queensway, New Delhi

MADRAS: Post Box 1662, Madras—1

BOMBAY: Post Box 1654, Lotus House, Marine Lines, Bombay

DISTRIBUTORS OF THE KINGSTRAND HOUSE



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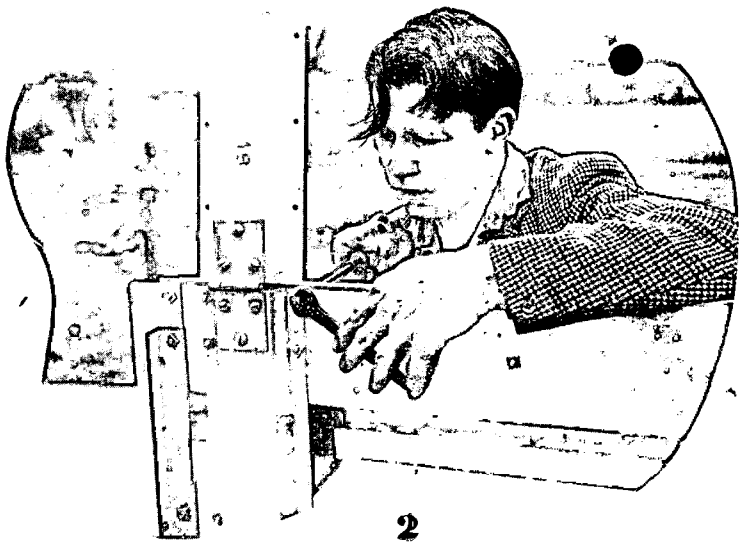
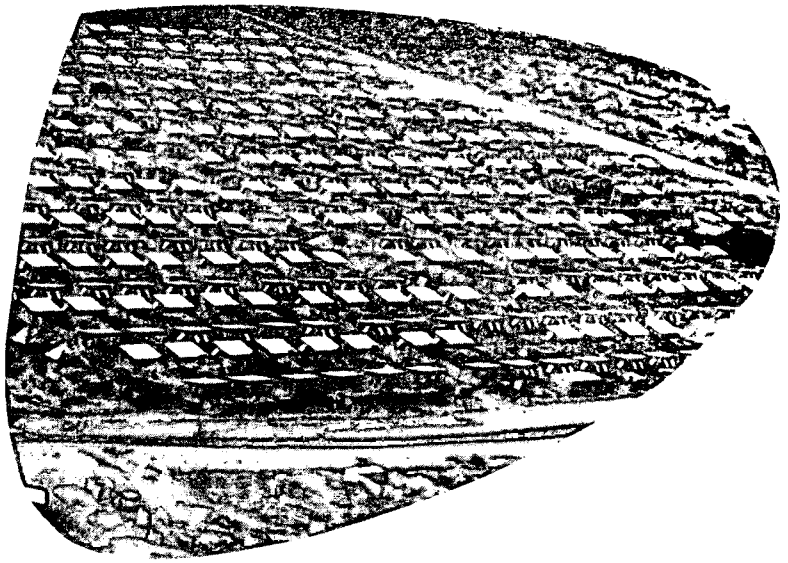


2

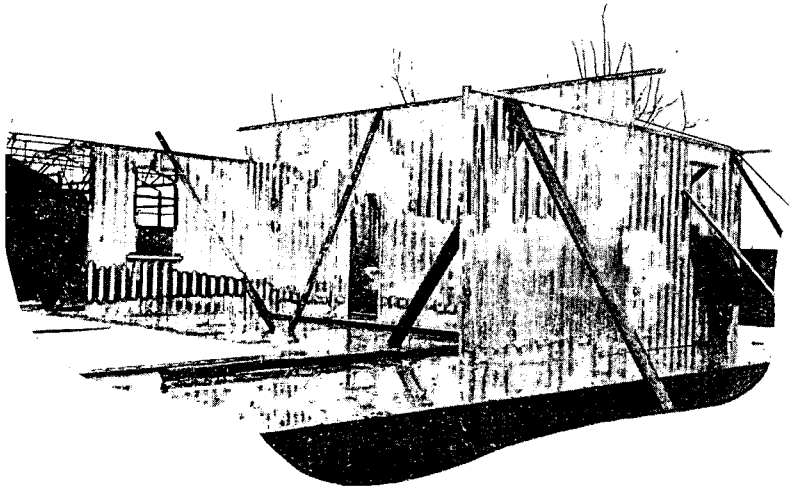
erecting

the aluminium

house



AN ALUMINIUM TOWNSHIP



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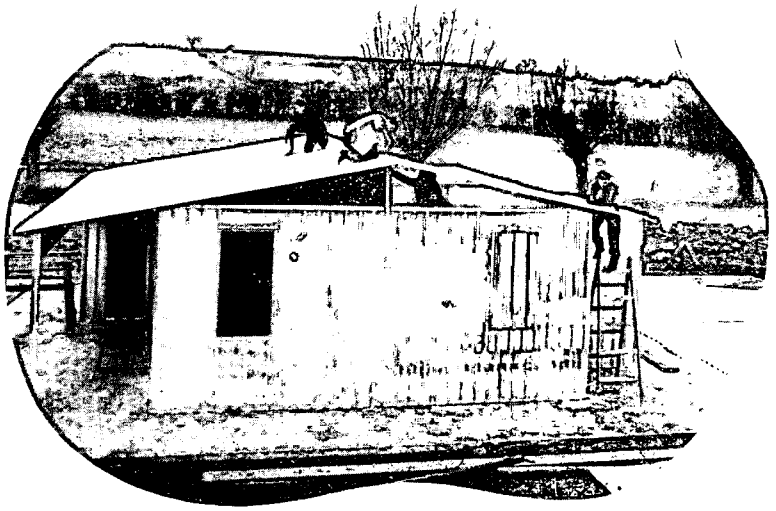


4

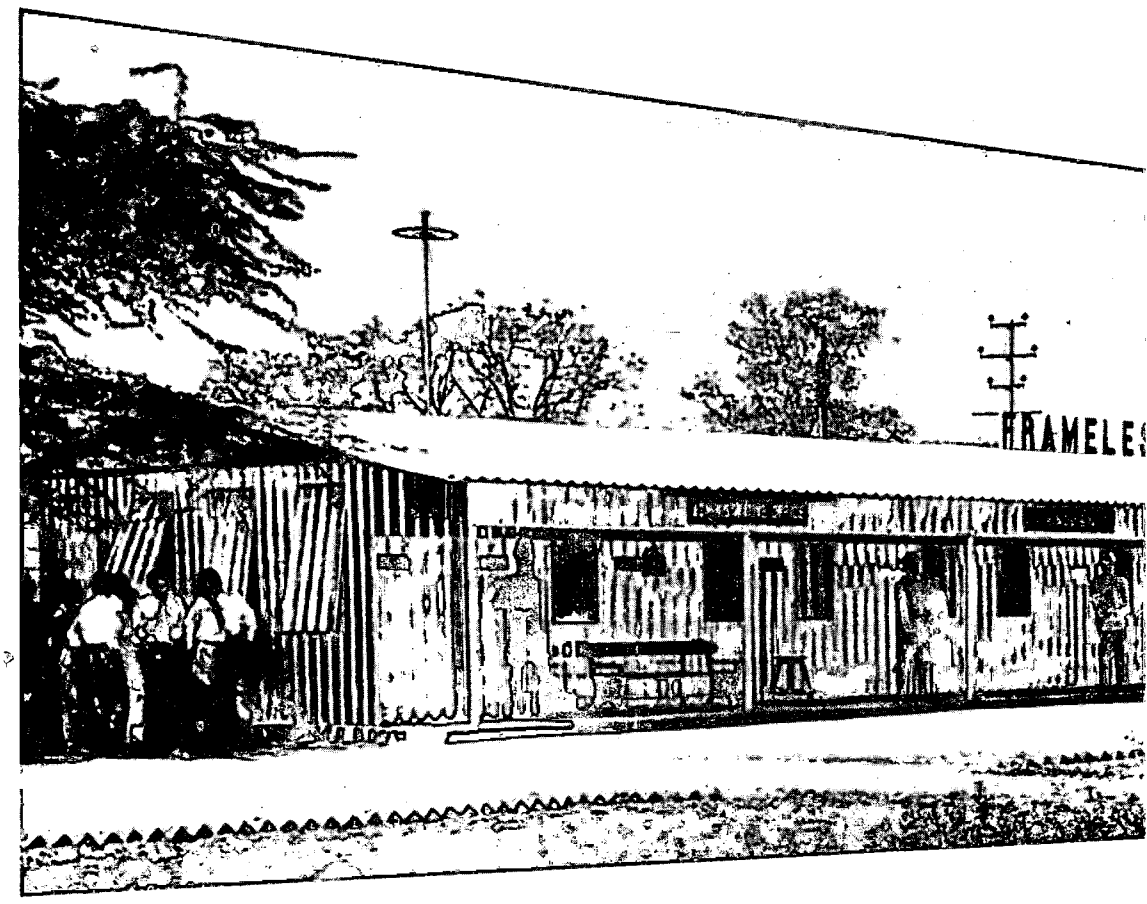
FACTS ABOUT THE FRAMELESS ALUMINIUM HOUSE

The frameless aluminium house pictured on the cover has received wide acceptance throughout the world. This house, being designed on the stressed skin principle, dispenses with the need for a framework as the novel square corrugations of the wall and roof sheets are sufficiently rigid to support the house even under abnormal high wind conditions. There are two basic designs of this aluminium house, a two room or a four room design, both may be fitted with verandah(s). Basic room sizes are $10' \times 10'$ and $10' \times 12\frac{1}{2}'$ but these may be varied by adjusting the center partition. Windows and doors are provided for sufficient ventilation.

The aluminium house is supplied in a single wooden case measuring about $11\frac{1}{2}' \times 3\frac{1}{2}' \times 1'$. This wooden case can be re-used for any subsequent transfer of the dismantled house. The house can be assembled by unskilled labour within a few days using only screw drivers and spanners to tighten up the bolts and nuts which are used throughout the structure. Any subsequent erection time of the house, using the same labour, can be cut considerably depending on local conditions, sometimes down to one or two days.

ADVANTAGES OF THE ALUMINIUM HOUSE

1. **Durable**—Aluminium is impervious to attack from wood-boring insects and will not rot, splinter, or swell. Aluminium is highly resistant to corrosion. Aluminium structures which were erected some 50 years ago are still giving excellent service. The aluminium frameless house, when properly cared for, will last for an indefinite time, and will stand up well under frequent dismantling.
2. **Extremely Lightweight**—The complete house weighs only 700 to 2200 lbs. net depending on its size.



3. **Can be Erected in Continuous Lines**—Design of the aluminium house allows erection of houses end to end, *in lines*, if desired. This arrangement is economical, as one sidewall serves two houses.
4. **Easily Dismantled and Stored**—When not required, the aluminium house can be dismantled, packed and stored without difficulty provided the sheets are absolutely dry and precautions are taken that no water can penetrate into the closed wooden case. The space occupied by one house erected will contain 100 houses dismantled and packed.

5. **Cool** –Aluminium reflects heat but does not radiate it. This means in practice that the aluminium wall and roof sheets of the house reflect away most of the heat from the sun without allowing it to radiate through into the interior of the house, thus leaving the rooms comparatively cool.

Experiments carried out over the period of a year produced the following data for three houses of identical size and construction, one of corrugated aluminium, one of corrugated galvanized iron and one of corrugated asbestos sheeting.

The measured temperatures throughout the testing period from January 1946 to 1947 were as follows: –

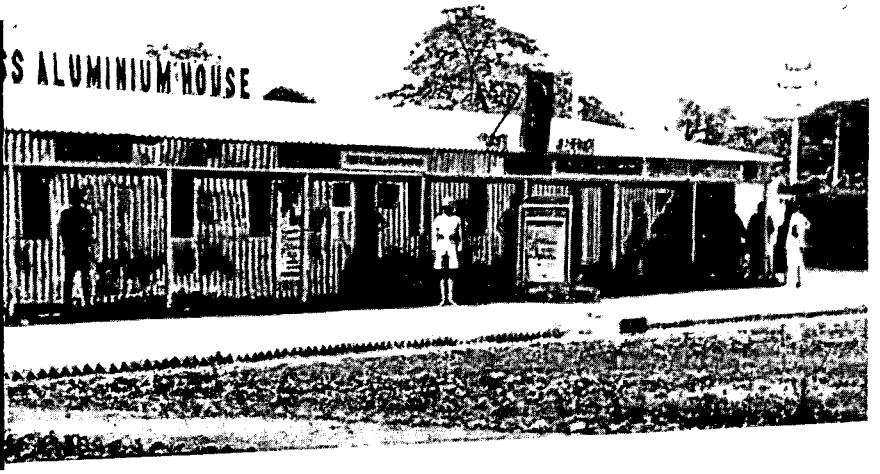
	Average	Peak
Outside temperature in the sun	111° F	122°F
Outside temperature in the shade	91° F	95° F
Temperature in aluminium house	88° F	89°F
Temperature in galvanized iron house ..	95° F	98° F
Temperature in asbestos house	93° F	97° F

The first column shows average temperatures throughout the 24 hours and the second column the typical peak temperatures at the heat of a rainless day in summer. The most significant part of the result is that the aluminium house is the only one in which the average temperature was below the outside shade temperature.

The results of these tests as well as practical results obtained from aluminium constructions have shown that the aluminium house is eminently suitable for hot climates.

In more temperate climates, the heat reflected in winter from the inside of the aluminium roof makes for economy in heating.

6. **Clean** –The house is extremely hygienic. It will not harbour fungus, insects, and vermin, and requires no whitewashing. The walls can be washed down with soap and water as often as desired without damage.
7. **Inexpensive** –Since the entire house consists of sheet aluminium, the cost of material and fabrication is low compared to that of buildings made of customary materials. Unlike these, the initial cost of an aluminium house is its final cost.
8. **Weatherproof** –The house is designed to withstand the highest winds and is completely rainproof.
9. **Painting unnecessary** –Unless desired for decorative purposes or for camouflage, painting is unnecessary. However, aluminium can easily be painted provided the sheets are clean and oil traces and dust are removed before applying the priming coat.



10. **Easily transportable** –The conventional army type 3-ton lorry will hold six houses packed in wooden cases. The cases when laid flat fit snugly in the 3-ton lorry. A 1500 cwt. lorry will hold 2 cases. Packing case specifications range from 11'—9" × 3' 1" × 9" to 15' 3" × 3' 2" × 1'.
11. **Simple Foundations** –The house can be erected on temporary, semi-permanent or permanent foundations made up from brick concrete, or concrete wood combinations. The methods of anchoring the house to the ground may range from using screws driven into wooden strips to anchor bolts set in concrete.

THE KINGSTRAND HOUSE
and
Small Buildings Of Kingstrand Type Construction

Floor Plans and Dimensions

STANDARD HOUSES

Room Sizes. Either:-

Main Rooms	10' x12' 6"
Secondary Rooms	5' x 7' 6"

OR (WHERE PLAN NO. IS MARKED *)

Main Rooms	10' x 10'
Secondary Rooms	5' x 5'

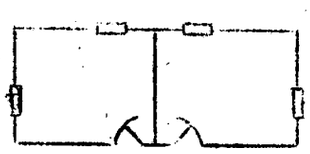
Wall Heights. Either:-

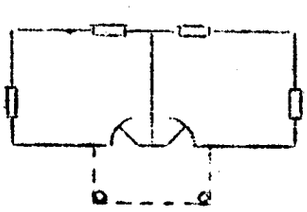
Verandah Eaves Height	8'
Main Eaves Height	9'
Ridge Height	11'

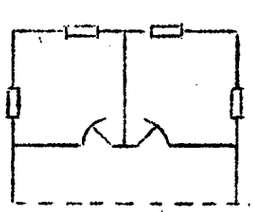
OR (WHEN SPECIFIED BY ADDING 500 TO THE PLAN NO. E.G.551, 552, ETC.)

Verandah Eaves Height	9'
Main Eaves Height	10'
Ridge Height	12'

PARTITIONS — UNLESS OTHERWISE SPECIFIED, ALL SOLID PARTITIONS AND PARTITIONS WITH DOORS EXTEND TO ROOF; PARTITIONS WITH DOOR OPENINGS (NO DOORS) EXTEND TO EAVES HEIGHT ONLY.


PLAN 51.


PLAN 52.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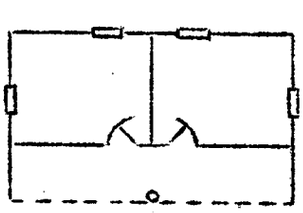
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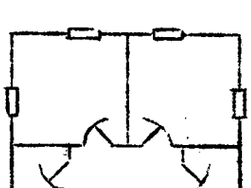
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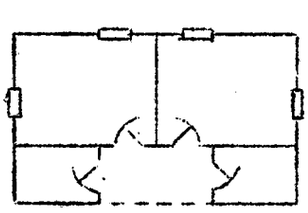
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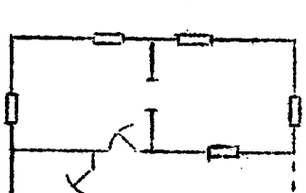
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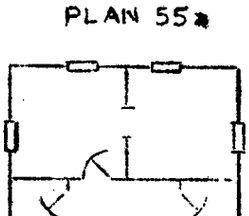
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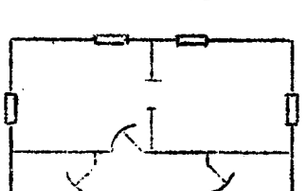
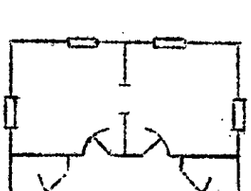

PLAN 59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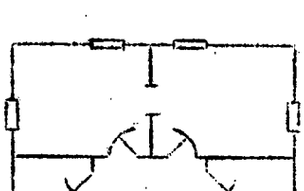
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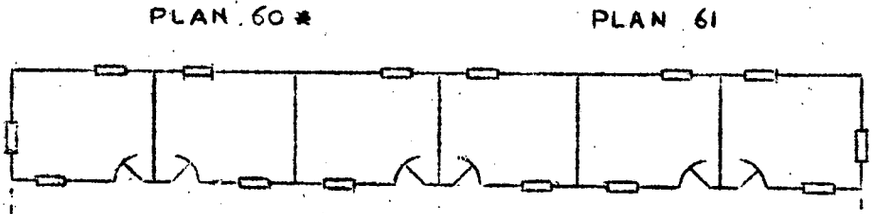
PLAN 62

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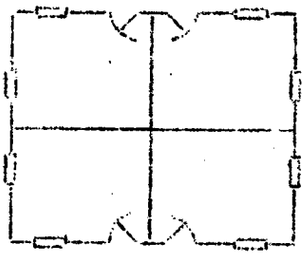

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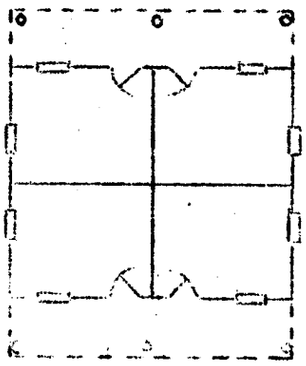

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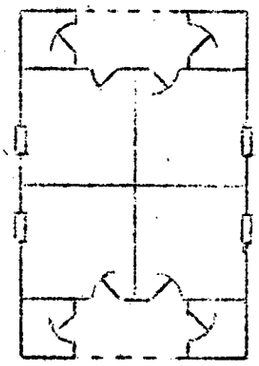

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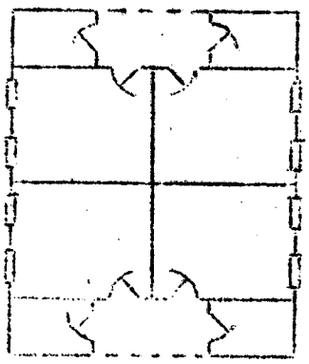

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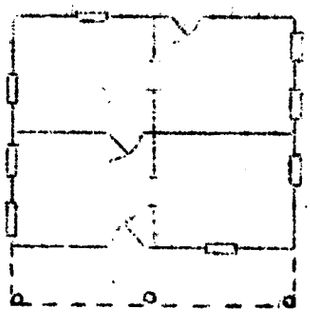

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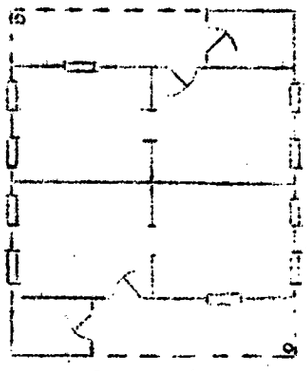

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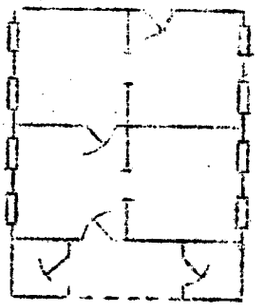

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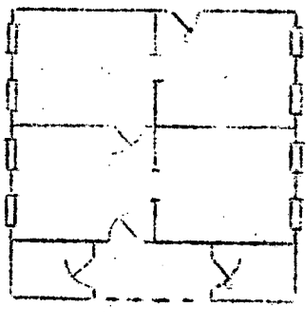

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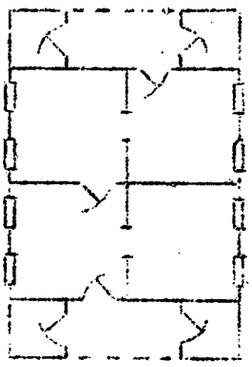

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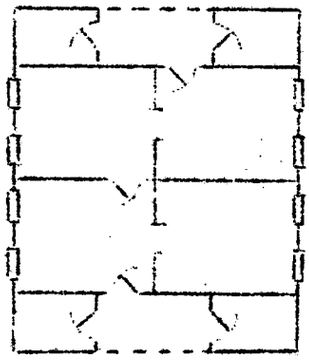


PLAN 72

INDIAN ALUMINIUM COMPANY LIMITED

Kalwa	Head Office:	
Post Box 5, Thana	31 Chowringhee Road	44, Queensway
Bombay	Post Box 361	Post Box 550
	Calcutta	New Delhi

DISTRIBUTORS OF THE KINGSTRAND HOUSE

SMALL BUILDINGS

Plan A - 3'9" x 5')
Plan B - 5' x 5') Front Wall Height 7' Rear Wall Height 6'6"
Plan C - 5' x 7'6")

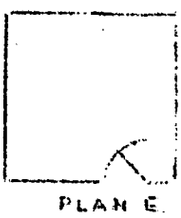
Plan D -10' x 7'6")
Plan E -10' x 10') Front Wall Height 8' Rear Wall Height 10'

PLAN A.

PLAN B.

PLAN C

PLAN D

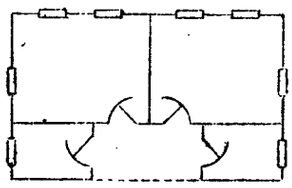


PLAN E.

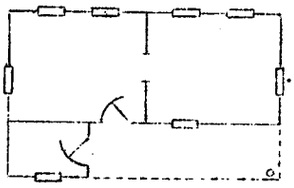
ALUMINIUM UNION LIMITED

ADDITIONAL STANDARD PLANS FOR KINSTRAND HOUSES

Floor Plans and Dimensions

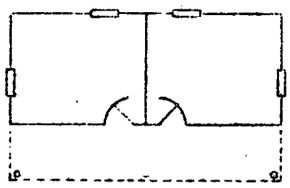


PLAN 73



PLAN 74

PLAN 75 *



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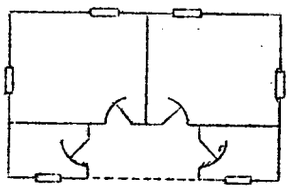

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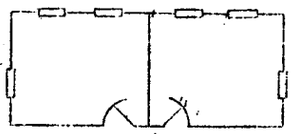

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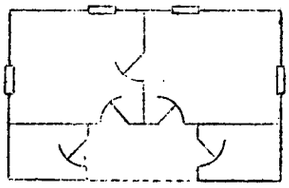

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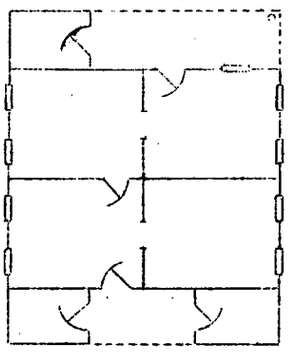

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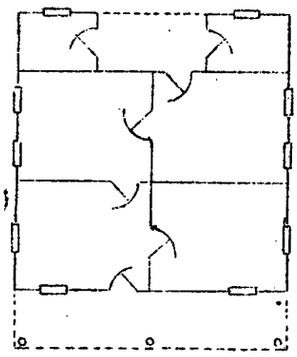

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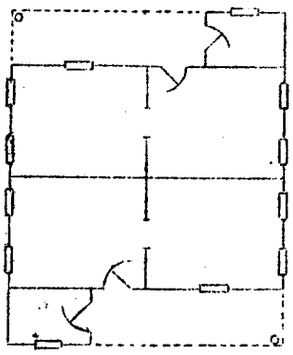

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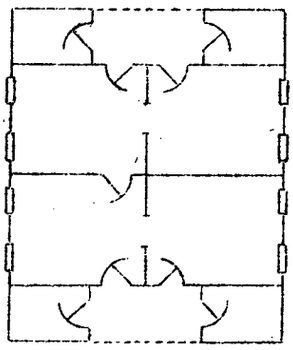
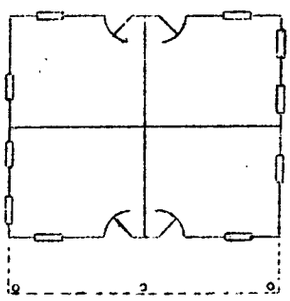
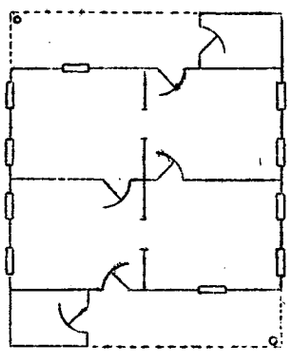


PLAN 83



PLAN 84



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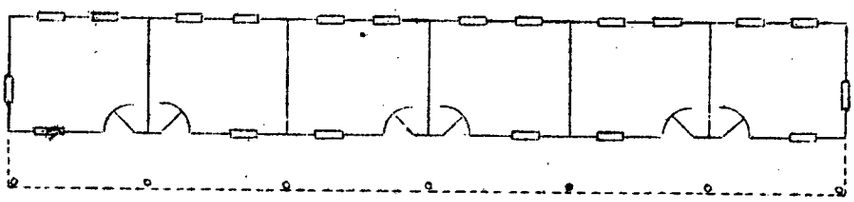
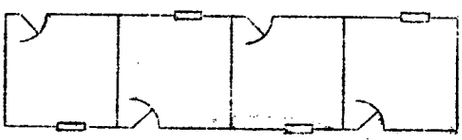


PLAN 86



PLAN 87 *

DESPATCHED (13)

No. B/2802/AGR. 15/Stores, Dt. 19 July 1954

To:- The Agrl. Officer, Coorg

Sub:- Aluminium Bin for paddy - Installation at the Koodige Farm.

Sir,

I am directed to say that it is proposed to instal one Aluminium Bin for paddy, as per illustrations and price list enclosed, at the Govt. Agrl. Farm at Koodige, at an approximate cost of Rs. 3,000/-.

2. I am to request that necessary arrangements may be made with the Suppliers (Indian Aluminium Company Ltd) for the installation of one Aluminium Bin at Koodige, in consultation with the E.E., CPWD., Coorg.

3 An estimate of actual cost of the Bin and approximate cost of construction may be furnished immediately, for according necessary expenditure sanction.

4. It is proposed to meet the expenditure out of the provision made

made under "40. Agricultural Agrl. experiments and research – Govt. experimental farms – Cl. Maintenance of Hoodige and Ponranfest farms", in the current year's Budget.

Secy to Govt

Copy to E. E., CPWD., Coorg, for favour of information with ref. to his U.O. Note No. 127/EE dated 21-6-1954.

2. Enclosures to U.O. Note are returned herewith.

21/7/54

21/7/54

(15

COORG AGRICULTURAL DEPARTMENT

No. C/5024

COORG GOVERNMENT SECRETARIAT. B 2595. 22 SEP 1954

Dated 21 September 1954.

FROM

THE AGRICULTURAL OFFICER,
Coorg, Post Box No. 9,
MERCARA.

To

The Secretary to Government,
General Department II,
M E R C A R A.

SIR,

Subject:- PREFABRICATED ALUMINIUM GRAIN STORAGE BIN FOR PADDY-INSTALLATION AT THE KUDIGE FARM-

p. 13

Reference your letter No:B.2802/AGR-15/54, dated 19-7-1954.

The following is the estimation of cost of installing a bin under reference.

(1).	Cost of a bin of 750 mds. capacity...	Rs. 1,500/-
(2).	Cost of foundation.	Rs. 235/-
(3).	Railway freight and other charges....	Rs. 265/-
	Total..	Rs. 2,000/-

A sum of Rs.2,000/- will be the approximate cost of installing a storage bin of 750 mds. capacity. It is, therefore, requested that necessary sanctions to incur an expenditure of Rs.2,000/- under the head "40-Agriculture - C.Agricultural Experiments & Research - Government Experimental Farms - C.1.Maintenance of Kudige and Ponnampet Farms" may kindly be accorded. I have already placed order for the supply of the bin.

Yours faithfully,

M. G. Ponnappa 20/9/54.

(M.G.Ponnappa),
AGRICULTURAL OFFICER IN CHARGE, COORG, MERCARA.

KMG/18-9.

Q1.

Copy to Bill clerk.

copy to T.O., Coorg.

Copy to A.O., Coorg, with ref. to his letter No. C/5024 dt. 21.9.1954, for information and necessary action

1/x/54

1/10/54

(17)

No. B 4645/AGR-1/54. Dt. 14th Octr. 1954.

DESPATCHED

Sub:- Prefabricated Aluminium grain Storage Bin for paddy - Installation at Koodige - Sanction for ...

Order.

Sanction is accorded to incur an expenditure not exceeding Rs. 2,000/- (Rupees two thousand), as detailed below, towards the purchase and installation of an Aluminium Bin for storing paddy at the Govt. Agl. Farm at Koodige:-

(1) Cost of Bin of 750 mds capacity: Rs. 1,500/-
(2) Cost of Construction of foundation: Rs. 235/-
(3) Railway freight and other charges: Rs. 265/-
Total Rs. 2,000/-

2) The expenditure should be debited to "40 - Agriculture - C - Agricultural experiments and research - Govt. experimental farms - C1 - Maintenance of Koodige and Ponnampet farms" in the Coorg State Budget for the year 1954-55.

By order etc
M
Secy to Govt.

To - The A.G. Mysore (Accts. & T.D)
Copy to Fin. Deptt
P. T.D.

KINGSTRAND ALUMINIUM HOUSES

Eaves Height 9 ft.
Ridge Height 11 ft.

Plan No.	Weight Nett	Weight Gross	Price per unit F.O.R.Main Indian Port Town
51	790 lbs.	993 lbs.	Rs. 2322
52	867 "	1070 "	Rs. 2500
53	865 "	1075 "	Rs. 2550
54	994 "	1204 "	Rs. 2815
55	992 "	1214 "	Rs. 2875
56	1130 "	1352 "	Rs. 3160
57	1020 "	1242 "	Rs. 2890
58	964 "	1186 "	Rs. 2800
59	1102 "	1324 "	Rs. 3085
60	980 "	1202 "	Rs. 2860
61	1118 "	1340 "	Rs. 3145
62	2649 "	3279 "	Rs. 7500
63	1401 "	1632 "	Rs. 3860
64	1731 "	1973 "	Rs. 4640
65	1810 "	2052 "	Rs. 4890
66	2081 "	2323 "	Rs. 5505
67	1526 "	1778 "	Rs. 4185
68	1861 "	2103 "	Rs. 4970
69	1500 "	1742 "	Rs. 4195
70	1701 "	1943 "	Rs. 4595
71	1798 "	2040 "	Rs. 4920
72	2041 "	2283 "	Rs. 5410
73	1158 "	1380 "	Rs. 3285
74	1041 "	1263 "	Rs. 2990
75	680 "	883 "	Rs. 2060
76	955 "	1165 "	Rs. 2710
77	1144 "	1366 "	Rs. 3225
78	804 "	1007 "	Rs. 2385
79	1146 "	1368 "	Rs. 3220
80	1959 "	2201 "	Rs. 5215
81	1936 "	2188 "	Rs. 5210
82	1875 "	2117 "	Rs. 5030
83	2073 "	2315 "	Rs. 5520
84	1580 "	1832 "	Rs. 4345
85	1893 "	2135 "	Rs. 5085
86	2691 "	3321 "	Rs. 7695
87	1256 "	1487 "	Rs. 3690
A)10	1220 "	1417 "	Rs. 3645
B)units	1370 "	1567 "	Rs. 3925
C)per case	1680 "	1877 "	Rs. 4670
D)5 units	1525 "	1767 "	Rs. 4160
E)per case	1755 "	1997 "	Rs. 4655

Shutter grilles and grille overdoors can be supplied along with the above houses. Extras for these commodities are as follows:

1. Full length shutter grilles - Rs. 30/- each
2. Half length shutter grilles - Rs. 18/- each
3. Grille overdoor 9 ft. wall - Rs. 16/- each
4. Grille overdoor 10 ft. wall - Rs. 19/- each

7

on a comparative Estimate of cost and relative advantages, E.E. does not recommend pre-fabricated Aluminium Storage huts or houses.

26/6/24

C.C.

23 W. might try a Bin as it would be damp proof. Glass to the eye is not a necessity. It could be painted green if need be. One Farm requires a Bin both for wet & dry.

29/6

30.6.24

TMC 1/7

OFFICE OF THE CHIEF MECHANICAL OFFICER C&DRG. No. 1485 Date 30/6

24 Draft letter to A.O. submitted.

2/7/24

2/7/24

Issued 8/7

Issued 15.7.24

(page 13)

In addition to this, suitable foundations and plinth of pucca masonry have to be provided which involves additional cost.

19 Taking plan 84 into consideration - a house with 4 rooms of 10'0" x 12'-6" and a verandah - the plinth area of which is about 625 S.ft. - costs Rs. 4345/- (f.o.r. Bombay) for the super-structure alone. The foundation, basement and flooring will cost about 1500/- extra. A similar house of brick-in-mud walls and plastered over with cement mortar, and roofed over with corrugated asbestos cement sheets will cost about Rs.4,800/-

20 Though there will not be much by way of maintenance for a pre-fabricated alluminium house, any damage, may result in a serious loss. One serious (dis)advantage is that the external surface will be high glaring to the eyes. Though, prefab alluminium structures cannot be recommended from the economic point of view, one storage bin and a house of prefab alluminium may be tried, as an experimental measure, in Coorg.

KSK. 21/4/54.

23/6/54
(S.H.Abhyankar)
EXECUTIVE ENGINEER.

Executive Engineer, C.P.W.D., Coorg, Mercara
U.O.No. 127-EE Dated 21st June, 1954.

21 Resubmitted with due respect to the orders of C.E at para 8 of these notes.
The E.E. has offered his remarks (U.O) and para 20 of his remarks (above) are submitted for favour of consideration. Budget Allotment is noted in para 6 of these notes.

(From para 21)

23/6/54

2 nos.

22 Attention is invited to paras 14, 15 and 20 of the Notes containing E.E.'s remarks.